by stating the alterations produced by the toxin in the nerve cells. They examined the alterations in the large cells of the anterior horn of the cord in guinea pigs after a fatal dose of tetanus toxin was given in such proportion as to make it act slowly. Some of the animals received only the toxin, others a mixture of toxin and anti-toxin, others anti-toxin, twenty-four hours after the administration of toxin.

Their final conclusions are that the toxin produced decided lesions in the spinal cells, which might disappear if the animal lived long enough. The mixture of toxin and anti-toxin produced no appreciable symptoms, and the autopsy showed very slight changes in the nucleus and the nucleolus.

The nerve cell has an affinity for the tetanic toxin and the latter for anti-toxin. The precise nature of the cellular reaction cannot be decided. It may, however, be concluded from these observations that immunity to the tetanic poison shows itself in the form of appreciable anatomical changes in the nerve cells. If immunity against infection is due to the action of phagocytes, immunity to soluble poisons is a function of the resistance of the nerve cells, a phenomenon, that is to say, essentially histogenic in character. MITCHELL.

CLINICAL NEUROLOGY.

201. PARALYSIE DOULOUREUSE DU FACIAL NERVE, AVEC HERPÈS ZOSTER DE L'OREILLE (Painful Paralysis of the Facial Nerve with Herpes Zoster of the Ear). M. L. Jacquet (Bulletins et Mémoires de la Soc. Méd. des Hopitaux de Paris, 15, 1898, p. 405).

Jacquet reports a case of left facial paralysis, which had lasted five days. In addition to the well-known signs, he notes:

1. A swelling of the preauricular region.
2. A red and painful œdema of the left ear, on the concha of which a group of herpetic vesicles was found.
3. A very painful point just below the auditory canal.
4. Pain on pressure over all the facial muscles of the left side.
5. Increase in temperature in the skin of the left side of the face.

All these signs developed in one night after the patient had been exposed to a draught. The writer speaks of this as a painful paralysis of the muscles supplied by the facial nerve, with vasomotor and trophic disturbances, probably resulting from exposure to cold. The points of emergence of the fifth nerve were not painful. Jacquet believes that neuralgia of the facial nerve is more common than is usually believed, and may exist with or without paralysis of this nerve. He reported a case of neuralgia of the seventh nerve without paralysis in the preceding number of this journal. He is inclined to believe that sensory fibres are contained in the seventh nerve.

SPILLER.

202. DIE RÖNTGEN-STRAHLEN IM DIENSTE DER HIRN-CHIRURGIE (The Röntgen Rays in the Surgery of the Brain). S. E. Henschen (Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, 3, 1898, p. 283).

A man was shot through the left eye, and was unconscious three weeks. When he regained consciousness he could neither speak nor understand what was said to him, and was hemiplegic on the left side. Memory and speech gradually returned. About a year after the injury he suffered from headache in the right occipital region. The position of the bullet was determined by the circumstances attending the shooting, by the clinical symptoms and by a Röntgen photograph. The bullet entered through the inner portion of the left eye, and as the revolver was fired from the left side, the bullet was supposed to have crossed the median line. The bullet had evidently gone upward, or otherwise the man would have died from hemorrhage from the large basal vessels, or from injury to the pons and medulla oblongata. Inasmuch as the man was hemiplegic on the left side, and the sense of smell was completely lost, and the chiasm was not injured, the bullet must have passed above the latter, and into the right hemisphere. As the hemisphere was complete, the injury probably was not cortical, and yet the inner capsule could not have been entirely destroyed, as the left-sided anæsthesia was not very pronounced. The vision in the lower left quadrant of the right eye (the left eye was destroyed) was somewhat diminished, and this was supposed to be due to a lesion of the dorsal bundle of the optic fibres. The bullet was believed to be between the parietal and occipital lobes, sub-cortical, and somewhat higher than the calcarine fissure. The Röntgen photograph showed the supposed location of the bullet to be correct, an operation was performed, and the bullet was found on the border of the angular gyrus, somewhat higher than the calcarine fissure. The patient recovered from the operation.

Henschen believes that the dorsal bundle in the occipital portion of the optic fibres (from the external geniculate body to the calcarine fissure) innervates the dorsal retinal quadrant. This has been shown to be true of this bundle in the optic tract and in the calcarine fissure. In this case vision was diminished in the lower nasal quadrant, and the position of the bullet confirmed his theory.

SPILLER.

203. L'ASYMÉTRIE CRANIO-FACIALE DANS L'HÉMIPLÉGIE SPASMODIQUE INFANTILE (Cranio Facial Asymmetry in Spasmodic Infantile Hemiplegia). Dr. Féré (Jour. des Conn. Méd., 16, 1897, p. 363).

Deformities of the face and skull, in infantile hemiplegic subjects, are considered rare by some authors, while by others of common occurrence, which divergence of opinions Dr. Féré ascribes to the difficulty in making correct measurements. These were taken by him in the following manner: 1. Anterior-posterior diameter of the head, from the external occipital protuberance to the tubera frontalia. 2. The dimensions of the orbit, in transversal and vertical directions. 3. The dimensions of the mandibula, from the lateral protuberance of the chin to the angulus. In normal people these measurements are subject to certain variations, but generally symmetrical. In fifteen cases of infantile hemiplegia observed, the author found: Flattening of the tuber frontale on the affected side in 7, equal or increased antero-posterior diameter in the remaining 8 cases; diminution of the orbit vertically in 10, the other 5 cases remaining unchanged.. The mandibula on the hemiplegic side showed shortening in 12 cases (80 per cent.), and when well worked gave rise to lateral deviations of the chin and lower jawbone. This atrophy is often associated with a deformity at the junction of the body and angles of the mandibula—a deformity frequently met with in degenerates, described by Albrecht as lemurian apophysis, and supposed to be of atavistic nature, but in reality due to malformation of the teeth and alveolar process.

The ears of infantile hemiplegics present frequently anomalies in this formation, as, for instance, deformity of the tragus, anti-tragus and lobule, and the presence of Darwin's tubercle. This latter may be multiple, and is due to abnormal development, not having any resemblance or connection with the so-called monkey ears, as main-